

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A data storage system that provides dynamic remapping of resources, the data storage system comprising:

a first network attached data storage device for storing one or more data storage resources;

at least one client device configured to request data from the first network attached data storage resource device;

a first server ~~capable of accessing~~ in communication with the first network attached data storage resource device;

a second server ~~capable of accessing~~ in communication with the first network attached data storage resource device, wherein the first and second servers communicate with the first network attached storage device via a local network; and

dynamic session redirector circuitry in communication with at least one client device via a stateful protocol and in communication with both the first server and the second server, wherein the dynamic session redirector circuitry is configured to access the first network attached data storage resource device in response to the request from the at least one client device, the dynamic session redirector circuitry is configured to access the first network attached data storage resource device through either the first server or the second server, the dynamic session redirector determining which server through which to access the ~~resource~~ first data storage device based upon the operational status of the first and second servers.

2. (Original) A data storage system as in Claim 1 wherein the operational status comprises a failure status of the first and second servers.

3. (Original) A data storage system as in Claim 1 wherein the operational status comprises a prediction of the expected load for the first and second servers.

4. (Original) A data storage system as in Claim 1 wherein the operational status comprises a processing load being handled by the first and second servers.

5. (Original) A data storage system as in Claim 1 wherein the operational status comprises a measure of the memory utilization of the first and second servers.

6. (Currently Amended) A data storage system as in Claim 1 wherein the dynamic session redirector circuitry maintains a table listing the association between the first network attached data storage resource-device and the server through which the dynamic session redirector circuitry accesses the first network attached data storage-resource device, and wherein the dynamic session redirector circuitry rewrites the table when the first network attached data storage device resource is accessed through a different server.

7. (Currently Amended) A data storage system that provides dynamic remapping of resources, the data storage system comprising:

a first server;

a second server;

a plurality of network attached data storage devices resources which are accessible through the first server and the second server wherein the first and second servers communicate with the network attached data storage devices via a local network; and

a dynamic session redirector in communication with at least one client device via a stateful protocol and in communication with both the first server and the second server, wherein the dynamic session redirector sends requests for access to at least one of the plurality of network attached data storage resources devices in response to a request for access to data storage resources made to the dynamic session redirector by the at least one client device, and wherein the dynamic session redirector further comprises a table mapping at least one of the plurality of network attached data storage devices resources with at least one of the first server and second server, and the dynamic session redirector sends the request for access to the network attached data storage devices resources to one of the first server and second server based upon the mapping between the network attached data storage device resource being accessed and the server listed in the table, and wherein the dynamic session redirector may remap any of the plurality of network attached data storage devices resources with one of either the first server or second server based upon the status of the first and second servers.

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8. (Currently Amended) A data storage system as in Claim 7 wherein the client is provided with a single system interface including the network attached data storage resources-devices of the first and second server by the dynamic session redirector.

9. (Currently Amended) A data storage system for providing a single system interface for multiple network attached data storage resources-devices to clients connecting to the data storage system across a network via a stateful network protocol, the system comprising:

a dynamic session redirector;

a plurality of servers connected via a communications network to the dynamic session redirector;

a storage area network hub connected to the one or more servers;

one or more raid controllers connected to the storage area network hub, wherein the one or more servers communicate with the one or more raid controllers via the storage area network hub; and

a plurality of data storage devices ~~resources~~ connected to the one or more raid controllers,

the dynamic session redirector configured to provide a single system interface for accessing the plurality of data storage ~~resources-devices~~ to a client connected to the data storage system, the redirector configured to receive requests from a client using a stateful protocol and to provide a first communications session between the client and the redirector in response to a request from the client, the dynamic session redirector sending requests for access to at least one of the plurality of data storage ~~resources-devices~~ in response to the requests from the client, and wherein the dynamic session redirector further comprises a table mapping at least one of the plurality of data storage ~~resources-devices~~ with one of the plurality of servers, and the dynamic session redirector sends the request for access to the data storage ~~resources~~ devices to one of the plurality of servers based upon the mapping between the data storage ~~resource-devices~~ being accessed and the server listed in the table, and wherein the dynamic session redirector may remap any of the plurality of data storage ~~resources-devices~~ to any of the plurality of servers based upon the status of the one or more servers.

10. (Currently Amended) A data storage system as in Claim 9 wherein the redirector is further configured to send a request for access to the data storage ~~resources-devices~~ to a second of the plurality of servers based upon the mapping between the data storage ~~resource-devices~~ being accessed and the server listed in the table.

11. (Currently Amended) A data storage system that provides dynamic association of network attached data storage ~~resources-devices~~ which are made available to clients connecting to the data storage system across a network, the data storage system comprising:

a plurality of network attached data storage device means for storing of data;

a first server means for providing access to the plurality of network attached data storage device means;

a second server means for providing access to the plurality of storage device means, wherein the first and second server means communicate with the plurality of network attached data storage device means via a local network;

a redirector means for receiving requests from a client for access to one of the plurality of network attached data storage device means, and for providing an association between the plurality of network attached data storage device means and one of the first server means and second server means, the redirector means also accessing one of the plurality of network attached data storage device means through the server means associated with the network attached data storage device means, the redirector means changing the association between any of the plurality of network data storage device means and the first or second server means based upon the status of the first and second server means.

12. (Currently Amended) A method for accessing data on a plurality of network attached data storage resources-devices comprising:

receiving a request for access to one of the plurality of network attached data storage-resources devices;

looking up an association between the one of the network attached data storage resources-devices and one of a plurality of servers for accessing the plurality of storage-resources devices, wherein the plurality of servers communicate with the plurality of network attached data storage device via a local network;

accessing the one of the network attached data storage resources devices through the one of the plurality of servers;

determining the load on at least one of the plurality of servers ~~due to the plurality of storage resources~~; and

assigning new associations between the plurality of network attached data storage resources-devices and the plurality of servers based upon the load on at least one of the plurality of storage-resources-servers.

13. (Currently Amended) A method as in Claim 12 wherein the step of accessing the one of the network attached data storage resources-devices further comprises sending a first request to the one of the plurality of servers, and sending a second request to a second of the plurality of servers.

14. (Currently Amended) A method for accessing data on a plurality of network attached data storage resources-devices comprising:

receiving a request for access to one of the plurality of network attached data storage resources-devices;

looking up an association between the one of the network attached data storage resources-devices and a plurality of servers for accessing the plurality of network attached data storage resources-devices wherein the plurality of servers communicate with the plurality of network attached data storage devices via a local network;

sending a first request to a first of the plurality of servers for accessing the one of the network attached data storage resources-devices;

sending a second request to a second of the plurality of servers for accessing the one of the network attached data storage resources-devices;

receiving a first response from the first server;

receiving a second response from the second server;

determining the load on at least one of the plurality of servers ~~due to the plurality of storage resources~~; and

assigning new associations between the plurality of network attached data storage resources-devices and the plurality of servers based upon the load on at least one of the servers ~~plurality of storage resources~~.

15. (Currently Amended) A method for balancing the load among a plurality of servers being used to access a plurality of network attached data resources storage devices, the method comprising:

maintaining a table of associations between a plurality of network attached data storage devices resources and a plurality of servers where at least one of the plurality of network attached data resources storage devices is assigned to one of the plurality of servers and wherein the plurality of servers communicate with the plurality of network attached data storage devices via a local network;

evaluating the load imposed upon the plurality of servers by the network attached data resources storage devices associated with the plurality of servers;

determining whether the load imposed by the plurality of network attached data resources storage devices may be more evenly distributed among the plurality of servers by altering the associations between the plurality of network attached data resources storage devices and the plurality of servers; and

updating the table of associations between the plurality of network attached data resources storage devices and the plurality of servers to reflect the more even distribution of load.